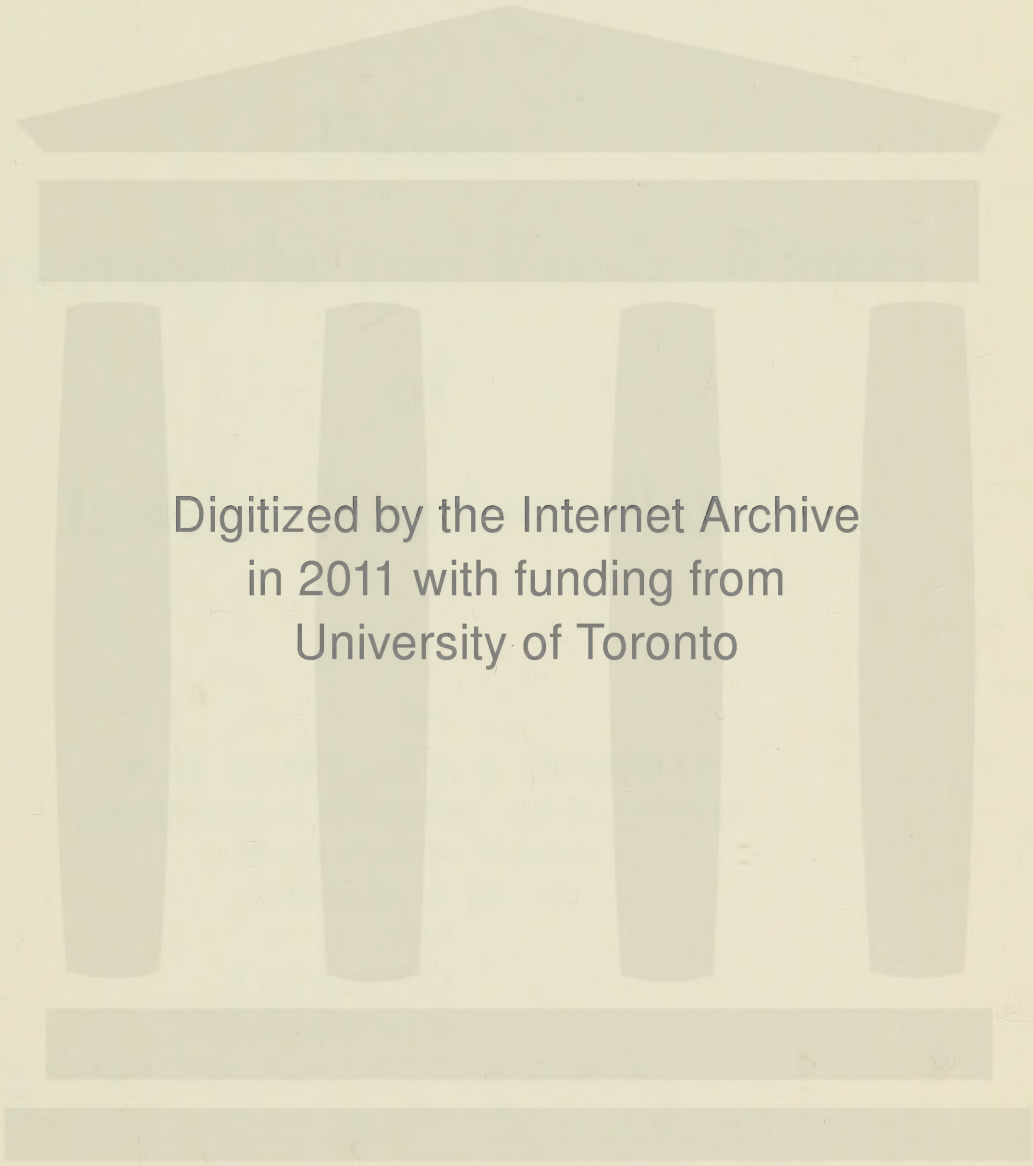

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A review of the flat-headed bats of the family Molossidae *from South America and Africa*

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In 1918 Señor F. Hoehne collected seven small molossid bats in the State of Mato Grosso, Brazil which were deposited in the Museo Nacional of Rio de Janeiro (nos. 3595, 3596, 3597, 3644, 3645, 3646 and 3647). Vieira (1942) later examined these specimens and described them as belonging to a new species *Molossops mattogrossensis* (Holotype no. 3597).

In 1962 the Royal Ontario Museum received a specimen collected by Mr. Stanley E. Brock near Dadanawa on the South Savannah of the Rupununi District, British Guiana which agreed with the original diagnosis of *M. mattogrossensis* except that the cranial characters indicated that the species did not belong in the genus *Molossops* (Fig. 2).

The only other known *M. mattogrossensis*, outside the type series, was a single specimen in the American Museum of Natural History, no. 149150, a male from Venezuela collected in 1950, which was kindly made available to the author by Drs. Richard Van Gelder and Karl Koopman.

Mr. Brock extended his search for additional specimens in British Guiana and obtained two females in November 1962, 22 additional specimens during 1963, and five in August and one in December, 1964. Mr. Cory T. de Carvalho of the Departamento de Zoologia, Sao Paulo, Brazil kindly supplied photographs of the paratype specimen of *M. mattogrossensis* (Fig. 1, no. 3596) and Dr. Joao Moojen, Museo Nacional, Rio de Janeiro, Brazil kindly forwarded the skin and skull of one of the original topotypes, no. 3644, for further study. Additional comparative material was made available by the following persons and institutions: Dr. Joseph E. Moore, Chicago Natural History Museum; Dr. Bruce J. Hayward, Western New Mexico University; Dr. Barbara Lawrence Schevill, Museum of Comparative Zoology, Harvard University; Dr. Henry W. Setzer, United States National Museum, Washington, D.C.

Additional assistance was rendered by Mr. John E. Hill of the British Museum (Natural History) and Dr. Russell E. Mumford of Purdue University. From the Royal Ontario Museum staff, Mr. Karl Pogany prepared Figs. 3 and 4, Mr. Paul Geraghty Fig. 6 and Mr. Lee Warren the photographs for Figs. 2, 5, 7, 8, and 9. In the over all research program in British Guiana vital co-operation has been extended by the British Guiana Museum through the help of Mr. Vincent Roth, former Director, Mr. Mohamad Hanif, present Director and Mr. Ram Singh, Deputy Director. The financial and other assistance provided by Booker Brothers and McConnell Limited and by the Canadian National Sportsmen's Show, through the kind offices of Mr. Frank H. Kortright, is gratefully acknowledged.

NEOPLATYMOPS, *gen. nov.**

Type species. Molossops mattogrossensis Vieira.

Diagnosis. A small molossid bat with ears widely separated (neither joined nor arising from the same point on the forehead); forearms with small wart-like granulations on dorsal surfaces (Fig. 3); a gular gland on

*This name is derived by the addition of the Greek prefix for *new* to the existing name *Platymops* to signify a new [world] flat[-headed] bat.

the lower throat in both sexes which invaginates into a sac in adult males; dental formula I $\frac{1-1}{2-2}$, C $\frac{1-1}{1-1}$, P $\frac{2-2}{2-2}$, M $\frac{3-3}{3-3}$ (Fig. 4); upper incisors strongly hooked forward, separated from each other and from the canines by spaces, lower incisors arranged in a shallow circular line and all deeply bifid with lobes more or less even; hypocones greatly suppressed on M^1 and M^2; third molar with well-developed third commissure; premaxillaries joined to form a continuous palate without emargination between the upper incisors; lower canines in line with cheek teeth and separated from each other by a relatively wide space; lower premolars of approximately similar size and shape and not closely crowded together between canines and molars; skull much flattened, without a distinct sagittal crest; lachrymal ridges well-developed with conspicuous antorbital foramina opening dorso-anteriorly.

Comparisons. Differs from *Molossops* Peters (1865; Miller, 1907) by the presence of wart-like granulations on the forearm; two instead of one upper premolars (Fig. 5); hypocones of M^1 and M^2 greatly reduced rather than being well developed; two instead of one lower incisors on each side; lower canines more widely separated and not crowded inward out of line with the molars; lower premolars not crowded together out of line and of similar size instead of the front one being noticeably smaller than the rear one; skull much flatter with wider and shallower brain case; rostrum longer and narrower in front of antorbital foramina, the latter opening more dorsally.

Differs from *Cynomops* Thomas (1920) by the presence of wart-like granulations on the forearm; two instead of one upper premolars (Fig. 5); hypocones of M^1 and M^2 greatly reduced rather than being well developed; M^3 with well-developed third commissures and M_3 with well-developed posterior lobe; outer lower incisors more or less in line and deeply bifid instead of being crowded behind the inner incisors and not deeply bifid; lower canines and premolars less crowded together; skull strikingly much flatter with relatively wider and much shallower brain case.

Neoplatymops differs from *Platymops* of central east Africa by the size and shape of the tragus which is relatively small, with a short, roundly-pointed free tip instead of relatively larger with a longer truncate free tip; the well-developed high lobate antitragus instead of being quite low and obscurely marked off; upper lip with only a few short stiff modified hairs instead of the many more and longer stiff hairs of *Platymops*; the wart-like granulations restricted to the forearm and absent on the first digit, third digit metacarpal and the tail; premaxillary bones fused to form a solid palate instead of being deeply emarginate (Fig. 5); posterior margin of the palate ending in a shelf rather than extending medially onto the dividing septum of the posterior nares; skull less excessively flattened and shallow; upper incisors strongly hooked forward and not bicuspidate; lower incisors more evenly bifid; anterior upper premolar well developed rather than reduced to a spicule or absent.

Neoplatymops differs from *Mormopterus* of Cuba by the presence of wart-like granulations on the forearm; two instead of one upper premolars; palate complete rather than emarginate between the upper incisors; posterior

margin of palate ending in a shelf rather than having a median projection resting on the dividing septum of the posterior nares; shape of the rostrum differs with more developed lachrymal ridges and more conspicuous antorbital foramina; the suppression of the hypocone of M^1 and M^2; first lower premolar approximately the same size as the second rather than being conspicuously smaller; lower incisors more deeply bifid and not projecting forward to form a half-circle in front of the canines; skull relatively wider and flatter and without a low sagittal crest. *Neoplatymops* also differs from *Mormopterus* of Africa by having two instead of three lower incisors on each side.

The above comparisons include the new world molossid bats which have the ears separated from each other by a relatively wide space (further comparisons of the African genera with similar ears are given below). The dental formula of *Neoplatymops* is shared with many bats now classified under the genus *Tadarida*, but other characteristics including the conformation of the palate, the antorbital region of the skull, and the ears, as well as the development of the gular gland and wart-like granulations on the forearm, all indicate a specialization deviating strongly from the main *Tadarida* line.

NEOPLATYMOPS MATTOGROSSENSIS (Vieira)

South American Flat-headed Bat

Molossops mattogrossensis Vieira, 1942, Arg. Zool. Sao Paulo, vol. 3, art. 8, p. 430.

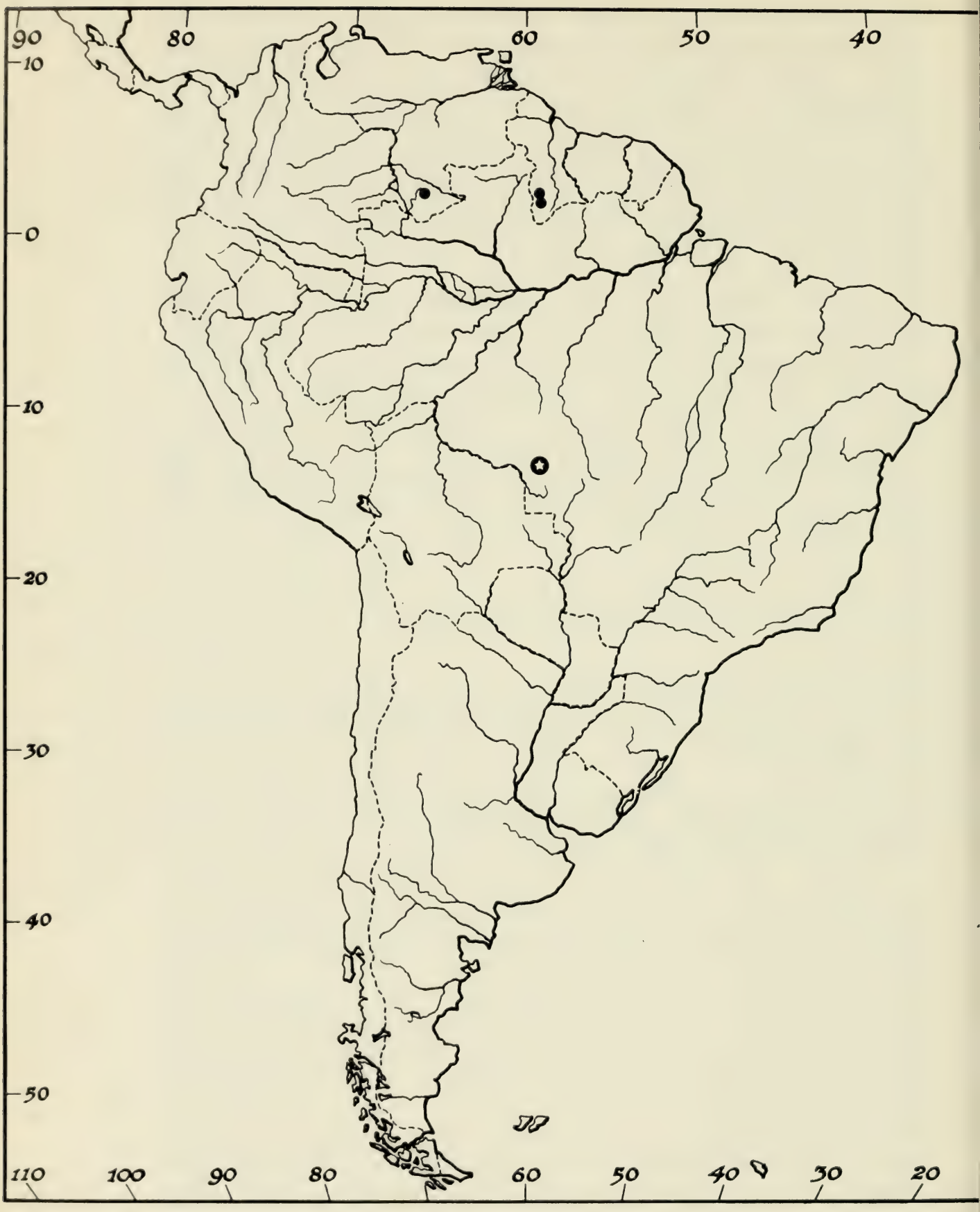
Molossops temminckii mattogrossensis, Cabrera, 1957, Revista Mus. Argent. Cience Nat., vol. 4, no. 1, p. 117.

Cynomops mattogrossensis, Goodwin, 1958, Am. Mus. Novitates no. 1877, p. 5.

Type. Male adult, no. 3597, Museu Nacional, Rio de Janeiro from S. Simao, Rio Juruena, north of Mato Grosso, Brazil; collected February 10, 1918 by Señor F. Hoehne.

Range. Presently known from three areas, (1) the type locality in Brazil (upper reaches of the Rio Juruena) north-east of Bolivia and north of Mato Grosso; (2) the western portions of southern British Guiana (Rupununi District); and (3) central Amazonas (upper Rio Cunucunuma), Venezuela. (See Map no. 1.)

Description. In addition to the basic characters of the genus, *M. mattogrossensis* is among the smallest of the family *Molossidae* (see Table I for summary of external and cranial measurements). The two premolars above and below are both well developed, the lower of approximately the same size, and are not crowded together. There is a pronounced pit or depression on each mandible behind the root of the canine below the premolars. A small pointed preorbital process is present on the lachrymal ridges on some specimens and absent in the others and does not appear to be related to age or sex.



MAP 1—Known distribution of the genus *Neoplatymops*.

The pelage is relatively short, thin and sparse (Fig. 2). The upper parts vary from near Mummy Brown to near Fuscous (of Ridgway) with the coloration restricted to the tips of the fur. The whitish base of the fur shows through strongly. The pelage of the underparts varies considerably

TABLE I. External and Cranial Measurements of *Neoplatymops mattogrossensis*. All measurements in mm.

Measurement	Females			Males		
	Av.	Range	No.	Av.	Range	No.
Forearm	28.9	26.8–30.4	16	29.4	28.8–30.5	8
Total length	72	70–74	3	75	71–78	3
Tail vertebrae	21.3	20–23	3	21	20–22	3
Hind foot	7.0	6–8	13	7.6	7–8	5
Ear, from notch	12.0	10–13	13	12.0	12–13	6
3rd digit, metacarpal	30.0	27.8–31.9	16	30.5	28.8–32.0	8
3rd digit, 1st phalanx	12.7	11.9–13.7	16	12.9	12.4–13.8	8
3rd digit, 2nd phalanx	10.0	9.0–11.1	16	10.4	9.2–11.7	8
Skull:						
Greatest length	14.6	14.2–15.2	11	15.5	15.1–15.8	6
Condylobasal length	14.0	13.6–14.3	11	14.8	14.5–15.0	5
Zygomatic breadth	9.2	9.0–9.6	11	10.0	9.7–10.2	5
Mastoid breadth	9.0	8.5–9.7	11	9.9	9.5–10.3	4
Interorbital least breadth	3.5	3.2–3.8	14	3.5	3.3–3.7	7
Preorbital breadth (lachrymal)	6.1	5.8–6.4	13	6.5	6.3–6.7	8
Height of brain case	4.2	4.1–4.4	11	4.5	4.3–4.6	5
M^3–M^3	6.4	6.1–6.6	15	6.8	6.6–6.9	8
Maxillary C–M^3	5.5	5.3–5.7	16	5.8	5.7–5.9	8
Mandibular C–M_3	6.0	5.8–6.1	16	6.3	6.2–6.4	8
Width across upper canines	3.7	3.4–3.9	15	4.2	4.0–4.4	7
Width across lower canines	2.15	2.0–2.3	14	2.66	2.5–2.9	7

in both pattern and coloration. Basically the belly is light coloured from the chin to the anus. Some fresh specimens are decidedly yellowish on the underparts, which usually fades to become whitish, pale greyish or light buff. There is usually a dark area (darker than the upper parts) extending from behind the ears along the neck (contrasting strongly with the light coloured chin and throat) to the shoulders. In most specimens it extends along under the wings on each side of the belly terminating near the insertion of the femur. In others these dark areas may be isolated as thoracoabdominal stripes by light coloured bands along the insertion of the wing membrane, creating a pattern not unlike *Platymops* of Africa. In at least two specimens (females) these lateral dark areas tend to join on the chest leaving a whitish throat and a greyish belly.

The wing membranes average darker brown than the pelage of the upper parts. The wart-like granulations on the forearm are quite conspicuous on specimens preserved in alcohol but tend to become obscure on dried skins. They are present in both sexes and on juveniles with forearms as short as 15.3 mm. (the smallest examined).

Geographic variation. Specimens examined from Venezuela and British Guiana show no discernible difference from the type series although the latter consists of skins and skulls made up from specimens long in alcohol and therefore of little value for colour comparisons.

Sexual variation. In general, males average larger than females (see Table I). In the limited sample of adults available there is a small degree of overlap in the greatest length of skull but a distinct separation of the sexes in the condylobasal length (females, 13.6–14.3; males 14.5–15.0). In zygomatic breadth, females range from 9.0 to 9.6 (av. 9.2) and males from 9.7 to 10.2 (av. 10.0). In the width and length of the maxillary tooth rows the smallest males tend to be equal to the largest females. An interesting sexual distinction in cranial characters is found in the width across both the upper and lower canines. The females average 3.7 (3.4–3.9) across the upper canines while males average 4.2 (4.0–4.4). Similarly the females average 2.15 (2.0–2.3) across the lower canines compared with 2.66 (2.5–2.9) for males.

Age variation. A series of nine juveniles from the Rupununi District of British Guiana consists of one preserved in alcohol with damaged skull removed, two well-made study skins with skulls, and six flat skins with skulls. Unfortunately most of the latter have the epidermis slipped from much of the skin. In size, the forearm length of this series ranges from 15.3 to 27.1 mm. The wart-like granulations are evident in the entire series. The smallest specimen (R.O.M. 32993, with a forearm of 15.3) fortunately retains enough of the epidermis to show that the dorsum is completely devoid of hair although a few of the short, stiff hairs of the upper lip are discernible and the long hairs protruding beyond the digits are conspicuous. The only evidence of pelage on the ventral part of the body is a few short, fine hairs surrounding the anal region. The two study skins (R.O.M. 32989 and 32991) with forearms of 21.8 and 22.0 mm. provide information on an intermediate stage of development of the pelage. Very fine, short fur is just beginning to appear all over the furred portion of the body. The pig-

mentation of the skin with the newly developing hair clearly outlines the normal colour pattern of the pelage. The mid-ventral region from the chin to the belly is unpigmented, in strong contrast to the dark thoraco-abdominal stripes which are bounded on the axillary border by a lighter band near the insertion of the wing membrane. Unpigmented white circular patches surround the mammae which lie on the axillary border of the thoraco-abdominal stripes just posterior to the insertion of the humerus. These two specimens were unsexed at the time of skinning and there was a temptation to assume they were both females until a specimen preserved in alcohol (R.O.M. 34185) was received to show that, although a definite male, mammae patches are conspicuous with a small clearly defined mammary gland in each.

The above specimen is the largest juvenile of the series and its forearm (27.1) exceeds the smallest adult female (forearm 26.8) which tentatively suggests that females reach maturity with a forearm length of about 26 mm. and males at about 28 mm. The metacarpal of the third digit is only 25.1 mm. long in the above juvenile, compared with the minimum of 27.8 in adult females and 28.8 in adult males. It would therefore appear that this bone grows rapidly during the late juvenile–young adult stage to become approximately equal to the length of forearm at about the same time the full adult dentition becomes functional or shortly thereafter. The maximum length of the metacarpal of the third digit (32.0 mm.) appears on the oldest specimen available (R.O.M. ♂ 34402, forearm 30.5) judging by the degree of wear on the dentition and the appearance of the sagittal development. In the adult series the metacarpal of the third digit averaged 1.1 mm. longer than the forearm in both males and females with the maximum differential also being the same in both sexes (1.5 mm.). These data suggest that the relative length of the metacarpal in relation to the forearm provides a useful index to relative age.

The pelage of specimen R.O.M. 34185 is fully developed and much darker above than that of the adults (near Mouse Gray of Ridgway) with little of the white of the base of the hairs showing through. The central underpart from the chin to the scrotum appears clear off-white, much whiter than the adults. The thoraco-abdominal stripes are grayish (near Deep Mouse Gray of Ridgway).

The gular gland consists of a raised glandular area devoid of hair with a central transverse row of eight pores filled with a black substance and a semicircular row of larger open pores forming a half ring below. These open pores are larger laterally and smaller medially. There is no suggestion of discoloration of the surrounding hair which may indicate that the gular gland is not yet functional at this age. There is a slight depression below the raised glandular area suggestive of the beginning of an invagination which later takes place in the adult males to form a sac surrounding the glandular area.

There appears to be a gradual widening of the skull from young adults to older animals, particularly in the mastoid and preorbital widths. In the oldest adult specimen there is a sagittal line suggestive of a crest which is completely absent in all other specimens examined.

Tooth development. The series of nine juveniles provides an opportunity to trace the development of the dentition of *Neoplatymops*. The smallest three (R.O.M. 32993, 32992 and 32994) with forearm lengths of 15.3, 16.2 and 17.1 mm. demonstrate the original milk dentition of $i \frac{2}{2}, c \frac{1}{1}, p \frac{2}{2}$. The upper incisors and canines are similar in size and shape, being relatively slender with a pronounced recurved tip directed inward and posteriorly (Fig. 6). The lower milk canine is also similar in size and shape but the lower incisors are flattened and bifid, resembling a more slender version of the permanent incisors. The anterior upper and lower premolars are small conical caps that are apparently non-functional and remain embedded in the gums. The posterior lower premolar is similar in size and shape to the anterior ones but extends through the gums and is located against the buccal rim of an alveolar trough which extends posteriorally from the circular alveolus of the first premolar. The posterior upper premolar is a thin flat blade-like structure, triangular in outline (viewed from the side) with the apex slanted toward the anterior portion. The tooth is supported on a low bifid root which rests in a shallow alveolus on the outer rim of the palate. The apex of the tooth apparently projects through the gum to be functional at least for a brief period.

A series of five specimens (R.O.M. 32987, 32988, 32989, 32990, 32991) have forearm measurements ranging from 21.0 to 22.2 mm. and demonstrate a transitional stage in which the full milk dentition is largely retained but the permanent teeth are beginning active eruption. The sequence begins with the eruption of the incisors and the outer or buccal cusps of M^1 followed by the outer cusp of M_1 and the lingual cusps of M^1 and the outer cusp of P^4. The second molars begin to appear above the gums before the first are fully functional. The lower milk premolars and the front upper milk premolar persist in some specimens and one or more are lost in others, but the upper rear milk premolar persists in the entire series although obviously loosely held between the erupting M^1 and P^4. The third molars remain embedded during this stage. The canines also remain embedded but the tips reach near the level of the rim of the alveoli. In the most advanced development within this stage both the milk and permanent lower incisors may be in place but in general the entire milk dentition persists with the exception of the non-functional premolars.

The third stage of dental development leading to the final permanent dentition is represented by only one specimen in our series (R.O.M. ♂ 34185, forearm 27.1). In the upper jaw the single permanent incisor is not yet fully erupted and the two milk incisors are still present on both sides. The permanent canine is partially erupted and the milk canine has been shed. P^3 is fully erupted and P^4 nearly so. All three molars appear fully functional. In the lower jaw all teeth are fully erupted and functional except that the cingulum of M_3 is not yet free above the gum and the canines have less than half of the shaft exposed. The two premolars are more crowded together than in the adult condition due to the position of the erupting canines. Further development to reach the adult condition consists

TABLE II. Distribution of Specimens Examined of *Neoplatymops mattogrossensis*

Cat. No.	Locality	Date	Sex	Age	Collection	Condition
3644	Brazil, S. Simao, Rio Juruena, N. of Mato Grosso. (Topotype)	1918	♀	y.ad.	D.Z.	Skin & skull (damaged)
149150	Venezuela, Amazonas, Tapara, N.W. of Cerro Divida, Upper Rio Cunucunuma	18 Apr. 1950	♂	ad.	A.M.N.H.	alcoholic (skull removed)
32263	B.G., 4 mi. E. Dadanawa Ranch Headquarters	May 1962	♂	ad.	R.O.M.	alcoholic (skull removed)
32391	B.G., 25 mi. N.E. Dadanawa	Nov. 1962	♀	ad.	R.O.M.	skin & skull
32392	B.G., 25 mi. N.E. Dadanawa	Nov. 1962	♀	ad.	R.O.M.	skin & skull
32974	B.G., 20 mi. E. Dadanawa	July 1963	♀	ad.	R.O.M.	skin & skull
32975	B.G., 20 mi. E. Dadanawa	July 1963	♀	ad.	R.O.M.	skin & skull (damaged)
32976	B.G., 15 mi. E. Dadanawa	July 1963	♀	ad.	R.O.M.	skin & skull
32977	B.G., 15 mi. E. Dadanawa	July 1963	♀	ad.	R.O.M.	skin & skull
32978	B.G., 15 mi. E. Dadanawa	July 1963	♂	ad.	R.O.M.	skin & skull
32979	B.G., 15 mi. E. Dadanawa	July 1963	♂	ad.	R.O.M.	skin & skull
32980	B.G., 15 mi. E. Dadanawa	July 1963	♀	ad.	R.O.M.	skin & skull
32981	B.G., 15 mi. E. Dadanawa	July 1963	♀	ad.	R.O.M.	skin & skull
32982	B.G., 15 mi. E. Dadanawa	July 1963	♀	ad.	R.O.M.	skin & skull
32983	B.G., 15 mi. E. Dadanawa	July 1963	♀	y.ad.	R.O.M.	skin & skull
32984	B.G., 15 mi. E. Dadanawa	July 1963	♀	ad.	R.O.M.	skin & skull
32985	B.G., 15 mi. E. Dadanawa	July 1963	♀	ad.	R.O.M.	skin & skull
32986	B.G., 15 mi. E. Dadanawa	July 1963	♂	ad.	R.O.M.	skin & skull
32987	B.G., 15 mi. E. Dadanawa	July 1963	—	juv.	R.O.M.	skin & skull
32988	B.G., 15 mi. E. Dadanawa	July 1963	—	juv.	R.O.M.	skin & skull
32989	B.G., 15 mi. E. Dadanawa	July 1963	—	juv.	R.O.M.	skin & skull
32990	B.G., 15 mi. E. Dadanawa	July 1963	—	juv.	R.O.M.	skin & skull
32991	B.G., 15 mi. E. Dadanawa	July 1963	—	juv.	R.O.M.	skin & skull
32992	B.G., 15 mi. E. Dadanawa	July 1963	—	juv.	R.O.M.	skin & skull
32993	B.G., 15 mi. E. Dadanawa	July 1963	—	juv.	R.O.M.	skin & skull
32994	B.G., 15 mi. E. Dadanawa	July 1963	—	juv.	R.O.M.	skin & skull
32995	B.G., 15 mi. E. Dadanawa	July 1963	♀	ad.	R.O.M.	skin & skull
34182	B.G., 20 mi. E.N.E. Dadanawa	Aug. 1964	♀	ad.	R.O.M.	alcoholic (skull removed)
34183	B.G., 20 mi. E.N.E. Dadanawa	Aug. 1964	♀	y.ad.	R.O.M.	alcoholic (skull removed)
34184	B.G., 20 mi. E.N.E. Dadanawa	Aug. 1964	♂	ad.	R.O.M.	alc., skull removed, damaged
34185	B.G., 20 mi. E.N.E. Dadanawa	Aug. 1964	♂	juv.	R.O.M.	alc., skull removed, damaged
34186	B.G., 20 mi. E.N.E. Dadanawa	Aug. 1964	♀	ad.	R.O.M.	alc., skull removed, damaged
34402	B.G., Tamtoon Outstation, 32 mi. S. Dadanawa	6 Dec. 1964	♂	ad.	R.O.M.	alc., skull removed, damaged

D.Z.—Departamento de Zoologica, Sao Paulo; A.M.N.H.—American Museum of Natural History; R.O.M.—Royal Ontario Museum.

of the loss of the two upper milk incisors and the full eruption of the upper incisor as well as the canines both above and below.

Specimens representing the first two stages of tooth development were all taken in July and the third stage specimen in August.

SAUROMYS *gen. nov.**

Type species. Platymops (Sauromys) petrophilus Roberts.

Diagnosis. Skull essentially as in *Tadarida* except much flattened throughout with no trace of a sagittal ridge; palate with wide and deep emargination between incisors (Figs. 8 and 9); nasals extend forward to about the same level as the posterior margin of the emargination of the palate; upper incisors with a small secondary cusp on the lateral side just below the gum line; ears widely separated (not joined or arising from the same point on the forehead).

Comparisons. A more detailed comparison of *Sauromys* with *Tadarida* must await a proper revision of the latter. *Sauromys* appears fundamentally more closely related to *Tadarida* and *Mormopterus* than to any other known genera. However the combination of the flatness of the skull, the conformation of the anterior nasal aperture, the weakly bicuspidate upper incisors and the degree of separation of the base of the ears seem to distinguish *Sauromys* from *Tadarida* as presently understood. *Sauromys* differs from *Mormopterus* in having two instead of one upper premolars and from the African forms in having two instead of three lower incisors, and in the absence of a well-developed gular sac in the males. The anterior emargination of the palate and the strong development of the hypocones of M^1 and M^2 are shared by *Tadarida*, *Sauromys* and *Mormopterus*, with the widely-spaced smaller ears being the most fundamental character shared by the latter two as distinct from *Tadarida.*

Sauromys differs from *Platymops* in the absence of wart-like granulations on the forearm; the absence of a well-developed gular sac; a well-developed anterior upper premolar (reduced or absent in *Platymops*); the strong development of a distinct hypocone on the M^1 and M^2; the different shape of the upper incisors; the different shape of the nasal aperture; the lack of highly-developed lachrymal ridges and a greater general narrowness of the skull throughout.

Sauromys differs from *Neoplatymops* in the absence of wart-like granulations on the forearm; the absence of a gular gland; the strong development of a distinct hypocone on M^1 and M^2; the different shape of the upper incisors, which are not strongly hooked forward; the lack of highly developed lachrymal ridges; the longer and relatively narrower skull; the deep emargination of the premaxillary portion of the palate; and the posterior margin of the palate which is continuous medially with the dividing septum

*This name was first proposed by Roberts (1917) as a subgenus of *Platymops* and was derived from the Greek *sauros* for lizard, and *mys* for mouse. The trivial name *petrophilus* ("stone-lover") was an allusion, no doubt, to this bat's habit of living under stones, much the same as lizards.

of the posterior nares rather than ending in a shelf that projects beyond the dividing septum.

Sauromys differs from *Molossops* and *Cynomops* in the shape of the anterior nasal aperture; in the conformation of the palate; in having two instead of one upper premolars; and in the relatively longer and much flatter skull.

Sauromys was first discovered by Roberts (1917), who described two species, designating them as a subgenus of *Platymops, P. (Sauromys) petrophilus* and *P. (Sauromys) haagneri*. Shortridge and Carter (1938) described *P. haagneri umbratus* and in 1946 Roberts described two additional races of *Platymops petrophilus*, *P. p. erongensis* and *P. p. fitzsimonsi* (see Map 2). Ellerman, Morrison-Scott and Hayman (1953) considered *Platymops petrophilus* and *P. haagneri* to be conspecific, reducing all the southern African forms to one species. Harrison and Fleetwood (1960) and Meester, Davis and Coetzee (1964) concur in this concept, and the latter authors suggest that some of the subspecies are invalid. Roberts (1946) indicates that in *S. p. petrophilus*, *erongensis* and *fitzsimonsi* the first phalanx of the third digit is shorter than the second whereas the single specimens of *erongensis*, *haagneri* and *petrophilus* examined have the first longer than the second, as do all specimens seen of both *Platymops* and *Neoplatymops*. Further clarification of the specific status and geographic variation in *Sauromys* must await a careful review of the genus throughout its range.

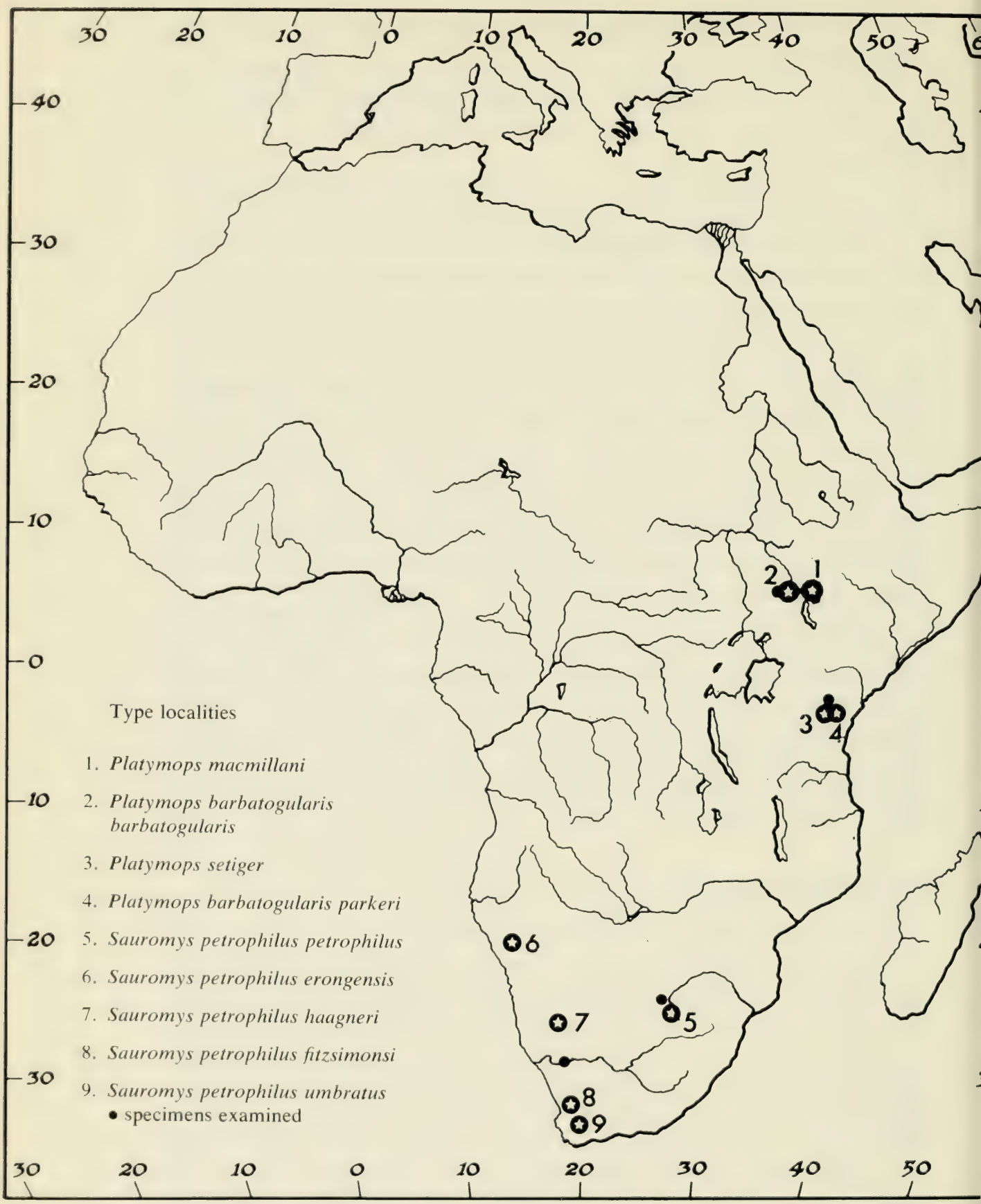
Specimens examined: Sauromys petrophilus petrophilus, Molepolole, Bechuanaland, American Museum of Natural History, ♂ 16594. *Sauromys p. haagneri*, Orange River near Goodhouse, Namaqualand, South Africa, Museum of Comparative Zoology, Harvard, ♀ 39600. *Sauromys p. erongensis*, Ombu Farm, Eronga Mountain, Omaruru district, Damaraland, South West Africa, Chicago Natural History Museum, ♂ 62254 (topotype).

PLATYMOPS Thomas

Type species. Platymops macmillani Thomas.

Diagnosis. A molossid of medium size with wart-like granulations on the forearm, the first digit and the third digit metacarpal as well as on the free portion of the tail; a gular sac on the lower throat region well developed containing a tuft of hairs which protrude from the sac in fully mature adults; skull broad and much flattened with prominent lachrymal ridges; palate with anterior emarginations about twice as long as wide; palate with a papilla extending down about half the length of the incisors to fill the space between; upper incisors bicuspidate; hypocone of M^1 and M^2 much reduced; anterior premolar reduced to a spicule or may be absent. (It appears probable that the spicule is actually a milk premolar which is more commonly encountered in younger specimens and that the normal adult dental formula should be considered as having only one premolar above.)

Additional details of the skull have been supplied by Miller (1907). This African genus has been recently reviewed in an important paper by



MAP 2—Known distribution of the genera *Platymops* and *Sauromys*, showing type localities and locations of specimens examined.

Harrison and Fleetwood (1960), who showed that *Mormopterus setiger* Peters (1878) is a *Platymops*. They regarded it as a distinct species from *P. macmillani*, based mainly on size and coloration of the pelage.

Harrison (1956) described *P. barbatogularis* from Lokomarinyang Marsh, Ilemi Triangle, S.E. Sudan (5°02′ N, 35°33′ E), distinguishing it from *P. macmillani* on the basis of a tuft of brownish hairs protruding from the gular sac and a whitish area lateral of the dark area extending back from the sides of the neck along the abdomen. The type locality of *P. macmillani* is not precisely known, being given as between Addis Ababa and Lake Rudolf. From the known occurrence of this genus elsewhere it is quite likely that it was taken not far from Lake Rudolf within the dry semi-desert region, rather than northward in the more mountainous region. Thus restricted, the type localities of *P. macmillani* and *P. barbatogularis* would be noticeably close together. In size and cranial detail the two forms cannot be distinguished.

Harrison and Fleetwood (1960) described *P. barbatogularis parkeri* from Lualeni Borehole, Maktau, Kenya (03°25′ S, 38°10′ E), which is essentially the same type locality as *P. setiger*. They distinguish it from *P. b. barbatogularis* on the basis of size and colour. They consider *Mormopterus setiger* Peters as follows:

> It is clear from certain points in the description that this form is a *Platymops*. Thus the upper incisors are bicuspidate, the skull very flattened (unfortunately no cranial measurements were given), the upper surface of the forearms is covered with warts and a gular sac is present, which is apparently untufted. In all these features it resembles *P. macmillani*, from which, however, it differs in being larger and also different in colour. It is larger than typical *P. barbatogularis* and approximately the same size as *P. b. parkeri*, and differs from both these forms in colour and in lacking the thoraco-abdominal stripes, which are darker than the dorsal surface of the body in *P. barbatogularis*. It also differs by lacking the glandular tuft in the gular sac (p. 277).

These authors then summarize the colour differences, indicating that dorsally *P. setiger* is rust-brown and ventrally rust-yellow centrally with sides of neck, chest and belly rust-brown, compared with *P. b. parkeri* which dorsally is brownish grey and ventrally creamy white centrally with thoraco-abdominal stripes castor brown, darker than the back.

Four female specimens of *Platymops* were collected August 10–23, 1963 not far from the type localities of both *P. setiger* and *P. b. parkeri* by Bruce J. Hayward. Two were taken two miles N.W. of Kibodo, about 94 miles S.E. of Nairobi (field nos. B.J.H. 2357 and 2478) and the other two about 100 miles S.E. of Nairobi on the Mombasa Road (field nos. B.J.H. 2474 and 2476). In the first two mentioned specimens the gular gland was removed in skinning, but in the other two there is a prominent brown tuft of hair protruding from the gular sac, agreeing with the description of *P. b. parkeri*. The coloration, however, agrees completely with *P. setiger*, particularly on the ventral parts where all four are decidedly rust-yellow centrally and rust-brown laterally. In size, the forearm lengths are 33.3, 33.8, and 34.3 (one not available), condylobasal length of skull, 16.1, 16.2 and 16.4. In these and other cranial details it would appear that these specimens are indistinguishable from either *P. setiger* or *P. b. parkeri*. Any distinction between these two forms rests on the question of the tufted or untufted condition of the gular sac and a slight difference in coloration.

The specimens collected by Hayward were made up from fresh skins and agree in details of colour, size and undoubtedly in cranial detail (hitherto unknown), and since they were taken only a very short distance from the type locality of *P. setiger* they must almost certainly be referred to that species. A close examination of Peters' (1878) original illustration (2c) shows that it has the appearance of having sparse hairs protruding from the gular sac. Since it has not been positively established that the gular sac of *P. setiger* is untufted, it must be concluded that this is, in fact, a normal condition for that species. The supposed colour distinction between *P. setiger* and *P. b. parkeri* is open to question since the type series of *P. b. parkeri* was made up from specimens preserved in alcohol and the yellow and reddish colours are particularly subject to fading or colour change in fluid preservatives. *Platymops barbatogularis* therefore becomes a synonym of *Platymops setiger* (see Table III).

In an attempt to clarify the relationship between *P. macmillani* and *P. barbatogularis*, Mr. John E. Hill of the British Museum (Natural History) was asked to re-examine the gular sac of the type of *P. macmillani.* He writes on February 8, 1965:

> In response to your letter of 1st February 1965 I have examined the holotype specimen of *Platymops macmillani*, the sole example of this species in the collection here. It is a male, B.M. 6.11.1.10. There is no tuft of hairs in the gular sac such as is found in *P. barbatogularis*, but the sac does contain a small number of relatively long hairs, some of which extend from the bottom of the sac almost to its aperture. There are no hairs protruding from the sac.

Mr. Hill further indicated that of the seven specimens in the original series examined by Thomas, six were to be returned to Rowland Ward, according to a letter to Thomas from Macmillan the sponsor of Zaphiro the collector. It was assumed that Messrs Rowland Ward in turn sold them to one or more museums including, perhaps, museums in North America.

As result of a quick canvass of the larger United States museums, one of the original paratypes was located in the United States National Museum, who kindly forwarded it to the author for study. It proved to be a female and slightly smaller than the holotype (see Table IV) but agreed closely with it in the amount of tufting in the gular sac. Six specimens from Equatoria, Sudan in the Chicago Natural History Museum taken just west of the type localities of *P. macmillani* and *P. barbatogularis* provide an age-series from young adults, which compare favourably with the holotype and paratype of *P. macmillani*, to fully mature adults (see Table IV and Fig. 7). Specimen C.N.H.M. ♂ 78748, Loelli, Equatoria, Sudan, although with an adult dentition, is quite obviously a young individual that is slightly smaller but agrees closely with the paratype of *P. macmillani* U.S.N.M. ♀ 173045 in colour, condition of the gular sac, and in cranial detail (see Fig. 7). The development of the tufting within the gular sac shows a close correlation with age when the following specimens are arranged in an age-series: (1) C.N.H.M. ♂ 78748, (2) U.S.N.M. ♀ 173045, (3) B.M. ♂ 6.11.1.10, (4) C.N.H.M. ♂ 78750, (5) C.N.H.M. ♀ 79620, (6) C.N.H.M. ♂ 74150, (7) C.N.H.M. ♀ 79619, (8) C.N.H.M. ♂ 78749. In the above age-series, all preserved in alcohol, the gular sacs of (1),

TABLE III. External and Cranial Measurements of *Platymops setiger setiger* (Peters). All measurements in mm.

Measurement	Harrison and Fleetwood 1960							Bruce J. Hayward				Peters 1878
	No. 5 imm. ♂	No. 1 ad. ♂	No. 4 imm. ♀	No. 7 imm. ♀	No. 2 ad.* ♀	No. 3 ad. ♀	No. 6 ad. ♀	2357 ad. ♀	2478 ad. ♀	2474 ad. ♀	2476 ad. ♀	ad. ♀
Forearm	34	36	30.5	33	34.5	34	34	33.3	33.8	34.3	—	35
Total length	93	100	80	80	91	97	100	93	92	96	93	90
Tail vertebrae	33	33	34	30	29	36	34	31	29	35	35	28
Hind foot	7	8	7	7.5	7	8	8	8	8	8	8	8
Ear, from notch	16	16	13	13	17	16	16	17	17	16	17	17
3rd digit, metacarpal	—	—	—	—	—	—	—	34.2	34.0	35.2	—	34
3rd digit, 1st phalanx	—	—	—	—	—	—	—	14.1	14.0	14.5	—	14
3rd digit, 2nd phalanx	—	—	—	—	—	—	—	12.1	12.2	11.0	—	12
Skull:												
Greatest length	—	—	—	—	—	—	—	—	16.4	16.7	16.7	—
Condylobasal length	16.3	17	14.6	15.5	16	15.7	15.8	—	16.1	16.2	16.4	—
Zygomatic breadth	—	12.3	—	—	12	—	11.9	—	—	11.9	—	—
Mastoid breadth	—	—	—	—	—	—	—	—	10.8	10.7	11.3	—
Interorbital least breadth	—	—	—	—	—	—	—	—	4.2	4.0	3.9	—
Preorbital breadth (lachrymal)	7.7	10.5	6.9	7.8	8.1	7.9	8.4	—	8.6	8.2	8.6	—
Height of brain case	3.8	4.3	3.8	3.8	4.2	4.2	4.1	—	4.4	4.2	4.3	—
M^3–M^3	—	—	—	—	—	—	—	7.6	7.6	7.5	7.4	—
Maxillary C–M^3	5.9	6.1	5.5	5.8	5.8	5.8	5.8	6.3	6.2	6.3	6.4	—
Mandibular C–M_3	6.2	6.9	5.8	6.1	6.2	6.6	6.6	6.6	6.8	6.7	6.8	—

*Holotype *P. barbatogularis parkeri.*

TABLE IV. External and Cranial Measurements of *Platymops setiger macmillani* Thomas. All measurements in mm.

	Thomas 1906 B.M. 6.11.1.10 ♂ Holotype	Harrison & Fleetwood 1960 Harrison 2.1897 ♂ Holotype *P. barbatogularis*	C.N.H.M. 78748 ♂	Harrison & Fleetwood 1960 Harrison 3.2067 ♂	C.N.H.M. 78750 ♂	C.N.H.M. 74150 ♂	C.N.H.M. 78749 ♂	U.S.N.M. 173045 ♀ Paratype	Harrison & Fleetwood 1960 Harrison 1.1867 ♀	C.N.H.M. 79620 ♀	C.N.H.M. 79619 ♀
Forearm	32.0	31.8	29.5	31.2	32.3	32.3	34.1	29.8	31.1	32.5	32.7
Total length	78	80	72	83	85	84±	92	75±	87	86	90
Tail vertebrae	27	—	26	22	28	27	28	23	—	29	29
Hind foot	—	7	8	7	9	8	8	8	7	8	8
Ear, from notch	15	11	13	14	15	14	16	13	12.2	14	15
3rd digit, metacarpal	31.0	—	28.7	—	31.9	31.9	34.6	28.3	—	32.0	32.8
3rd digit, 1st phalanx	12.5	—	10.8	—	12.3	13.4	14.4	11.8	—	12.6	14.8
3rd digit, 2nd phalanx	11.0	—	9.0	—	10.4	12.7	13.1	9.4	—	10.6	12.4
Skull:											
Greatest length	—	—	14.7	—	16.3	16.1	17.0	15.0	—	—	16.1
Condylobasal length	16.0	14.9	14.3	14.8±	15.8	15.8	16.7	14.5	14.2	—	15.8
Zygomatic breadth	11.2	—	—	—	11.0±	11.9	11.8	10.0±	—	—	11.3±
Mastoid breadth	10.2	—	9.8±	—	10.0	11.3	11.2	9.5	—	—	10.8
Interorbital least breadth	3.8	—	3.8	—	4.0	4.1	4.2	4.0	—	3.9	4.0
Preorbital breadth (lachrymal)	7.4	7.3	—	7.8	8.1	8.6	8.6±	7.2	7.2	8.3	8.3±
Height of brain case	4.0	3.7	3.5	3.9	4.3	4.4	4.5	3.5	3.9	—	4.1
M^3–M^3	—	—	6.7	—	7.2	7.3	7.4	6.8	—	6.6	7.4
Maxillary C–M^3	6.0	5.6	5.4	5.0	6.3	6.1	6.3	5.7	5.1	5.9	6.0
Mandibular C–M_3	6.6	5.8	6.0	5.6	6.5	6.4	6.6	6.0	5.6	6.3	6.6

(2) and (3) contain a few long hairs which are uncoloured and do not protrude from the rim of the sac. In (4) and (5) the hairs are more numerous and protrude slightly from the sac but are still largely uncoloured. In (6), (7) and (8) the tufts are dark brown in colour and protrude prominently from the sac. Harrison and Fleetwood (1960) indicate that in *P. b. parkeri* "the tuft is present in the three immature animals, but it is scantier, the hairs measuring 1.2 to 1.6 mm. in length" p. 272 [up to 3 mm. in adults], which is entirely consistent with the above.

It therefore becomes evident that the presence of hairs within the gular sac is characteristic of all known *Platymops* and that the degrees of coloration and protruberance from the sac are related to age.

Platymops b. barbatogularis is obviously a synonym of *P. macmillani*, which in turn is quite closely related to *P. setiger.* The limited number of specimens available (Tables III, IV and V) indicate that *macmillani* averages smaller than *setiger* in several dimensions including the length of forearm, third digit metacarpal, ear from notch and condylobasal length when each sex is compared. In several other cases, however, the maximum size for *P. macmillani* approaches the minimum size of *P. setiger.* A larger sample of each form with an equivalent age distribution in the samples will undoubtedly show a greater degree of overlap of measurements. On the basis of cranial characters of the material available any distinction between *macmillani* and *setiger* must be at the subspecific rather than at the specific level.

In external characters, other than size, the pattern and coloration of the pelage may prove to have geographic significance. Unfortunately all the specimens of *P. macmillani* available for this study are preserved in alcohol and of limited value for critical colour comparison with the dried skins of *P. setiger.* In the light of variations observed in *Neoplatymops* and the available specimens of *P. macmillani* it is evident that there is a tendency for younger adults to have a lighter coloured mid-ventral region than older adults (i.e. nearer off-white to light grey rather than buffy tones), and a greyer (less brownish) dorsum. A similar tendency was noted by Harrison and Fleetwood (1960) for the southern Kenya race. The lateral separation of the thoraco-abdominal stripes by a light band at the insertion of the wings as described for *P. barbatogularis* is variable in *Neoplatymops* and not evident in the specimens of *Platymops* examined.

All available evidence indicates that all known *Platymops* belong to one species, *Platymops setiger*, the oldest available name, which includes two races, *P. s. setiger* the larger form known from southern Kenya and *P. s. macmillani* a smaller race known from north and west of Lake Rudolf including southwestern Abyssinia or northern Kenya and adjacent Equatoria, Sudan (see Table V and Map 2).

Specimens examined: Platymops setiger setiger, Bruce J. Hayward collection, four from Kenya, ♀ 2357 and ♀ 2476 from 2 mi. N.W. Kibodo, 94 mi. S.E. Nairobi; ♀ 2474 and ♀ 2476 from 100 mi. S.E. Nairobi. *Platymops setiger macmillani*, United States National Museum, ♀ 173045, topotype; Chicago Natural History Museum, 6 specimens from Equatoria,

TABLE V. Summary of External and Cranial Measurements of *Platymops setiger*. All measurements in mm.

Measurement	*P. s. macmillani* ♂ ad.				*P. s. setiger* ♂		*P. s. macmillani* ♀ ad.				*P. s. setiger* ♀ ad.			
	Av.	Min.	Max.	No.	one ad.	one imm.	Av.	Min.	Max.	No.	Av.	Min.	Max.	No.
Forearm	32.0	29.5	34.1	7	36	34	31.5	29.8	32.7	4	34.1	33.3	35	7
Total length	82.0	72	92	7	100	93	84.5	75±	90	4	94.0	90	100	8
Tail vertebrae	26.3	22	28	6	33	33	27.0	23	29	3	32.1	28	36	8
Hind foot	7.8	7	9	6	8	7	7.8	7	8	4	8.0	7	8	8
Ear, from notch	14.0	11	16	7	16	16	13.3	12.2	15	4	16.6	16	17	8
3rd digit, metacarpal	31.6	28.7	34.6	5	—	—	31.0	28.3	32.8	3	34.4	34.0	35.2	4
3rd digit, 1st phalanx	12.7	10.8	14.4	5	—	—	13.1	11.8	14.8	3	14.1	14.0	14.5	4
3rd digit, 2nd phalanx	11.2	9.0	13.1	5	—	—	10.8	9.4	12.4	3	11.8	11.0	12.2	4
Skull:														
Greatest length	16.0	14.7	17.0	4	—	—	15.5	15.0	16.1	2	16.6	16.4	16.7	3
Condylobasal length	15.5	14.3	16.7	7	17.0	16.3	14.9	14.5	15.8	3	16.0	15.7	16.4	6
Zygomatic breadth	11.5	11.0±	11.9	4	12.3	—	10.7±	10.0±	11.3±	2	11.9	11.9	12.0	3
Mastoid breadth	10.5	9.8±	11.2	5	—	—	10.2	9.5	10.8	2	10.9	10.7	11.3	3
Interorbital least breadth	4.0	3.8	4.2	5	—	—	4.0	3.9	4.0	3	4.0	3.9	4.2	3
Preorbital breadth (lachrymal)	8.0	7.3	8.6	6	9.2	7.7	7.8	7.2	8.3	4	8.3	7.9	8.6	6
Height of brain case	4.1	3.5	4.5	7	4.3	3.8	3.8	3.5	4.1	3	4.2	4.1	4.4	6
M^3–M^3	7.2	6.7	7.4	4	—	—	6.9	6.6	7.4	3	7.5	7.4	7.6	4
Maxillary C–M^3	5.8	5.0	6.3	7	6.1	5.9	5.7	5.1	6.0	4	6.1	5.8	6.4	7
Mandibular C–M_3	6.2	5.6	6.6	7	6.9	6.2	6.1	5.6	6.6	4	6.6	6.2	6.8	7

Sudan; ♂ 78748 from Loelli, ♂ 74150, ♂ 78749, ♂ 78750, ♀ 79619, ♀ 79620 from Lokwi.

SUMMARY

Among the molossid bats, three genera have become adapted for living in the thin crevices of rocks or similar situations and each reflects this adaptation in an extreme flattening of the skull. To date all three have been quite rare in collections and our knowledge of them quite meagre. *Platymops* is known to occur in the thin crevices between rocks in east Africa. *Sauromys* has been discovered in south Africa underneath stones where scorpions were being sought. The first *Neoplatymops* discovered in British Guiana was also found underneath a stone out in the savannahs. The three genera are rather widely separated geographically and each has fundamentally distinct morphological characteristics which indicate that although related, the relationships among them are not particularly close. The closest affinities with other genera seem to be exhibited by *Sauromys* which cranially resembles a *Tadarida* with an extremely flattened skull, and externally resembles *Mormopterus*. Both *Sauromys* and *Platymops* of Africa share with *Mormopterus* a wide separation of the ears, which differs from *Tadarida*, but show a relationship with *Tadarida* in the conformation of the palate (both fore and aft). *Platymops* differs in (1) the development of the wart-like granulations on the forearm; (2) the development of gular glands; (3) an extreme antorbital expansion of the lachrymal ridges, a modification undoubtedly associated with the great flattening of the skull; and (4) a reduction of the hypocones of M^1 and M^2. These latter four characteristics are shared with *Neoplatymops* but the South American genus is more distinct from the *Tadarida* line in the conformation of the palate (both fore and aft). The fusion of the premaxillary bones to form a solid palate in *Neoplatymops* appears to represent an intermediate condition between *Tadarida* on the one hand and the *Molossops-Cynomops* complex on the other. While the palate is complete in all *Neoplatymops* known (both juvenile and adult) the spacing between the upper canines would suggest that fusion of the anterior portion of the palate represents a transitional condition moving toward the *Molossops-Cynomops* line. *Neoplatymops* shows other affinities with that line in the shape of the upper incisors which are strongly hooked forward. The conformation of the posterior margin of the palate as well as other details of the skull suggest that *Molossops* could be derived from *Neoplatymops* by the loss of the anterior premolar and one of the lower incisors or that *Cynomops* could be similarly derived by the loss of the anterior premolar and the third commissure of the last upper molar and a corresponding reduction of the posterior lobe of M_3. In each case, however, a deepening of the skull and an expansion of the hypocone of M^1 and M^2 would have to accompany the reduction in dentition along with the loss of the wart-like granulations on the forearm.

The flat-headed molossid bats may thus be regarded as three distinct

genera with the following forms known at present. The geographic races of *S. petrophilus* are listed provisionally pending a critical review of the species.

Sauromys petrophilus petrophilus (Roberts)

Platymops (Sauromys) petrophilus Roberts, 1917.

Platymops petrophilus, Allen, G. M., 1939.

Platymops petrophilus petrophilus, Roberts 1951; Ellerman, Morrison-Scott and Hayman, 1953; Harrison and Fleetwood, 1960; Meester, Davis and Coetzee, 1964.

Type locality: Bleskop, near Rustenburg, Transvaal, South Africa.

Sauromys petrophilus erongensis (Roberts)

Platymops petrophilus erongensis Roberts, 1946.

Platymops petrophilus erongensis, Roberts 1951; Ellerman, Morrison-Scott and Hayman, 1953; Harrison and Fleetwood, 1960; Meester, Davis and Coetzee, 1964.

Type locality: Ombu Farm, Eronga Mountain, Omaruru District, Damaraland, South West Africa.

Sauromys petrophilus fitzsimonsi (Roberts)

Platymops petrophilus fitzsimonsi Roberts, 1946.

Platymops petrophilus fitzsimonsi, Roberts, 1951; Ellerman, Morrison-Scott and Hayman, 1953; Harrison and Fleetwood, 1960; Meester, Davis and Coetzee, 1964.

Type locality: Mitchell's Pass, near Ceres, Cape Province, South Africa.

Sauromys petrophilus haagneri (Roberts)

Platymops (Sauromys) haagneri Roberts, 1917.

Platymops haagneri, Shortridge, 1934; Allen, G. M., 1939; Harrison, 1956.

Platymops haagneri haagneri, Shortridge, 1942; Roberts, 1951.

Platymops petrophilus haagneri, Ellerman, Morrison-Scott and Hayman, 1953; Harrison and Fleetwood, 1960; Meester, Davis and Coetzee, 1964.

Type locality: Keetmanshoop, Great Namaqualand, South West Africa.

Sauromys petrophilus umbratus (Shortridge and Carter)

Platymops (Sauromys) haagneri umbratus Shortridge and Carter, 1938.

Platymops haagneri umbratus, Roberts, 1951.

Platymops petrophilus umbratus, Ellerman, Morrison-Scott and Hayman, 1953; Harrison and Fleetwood, 1960; Meester, Davis and Coetzee, 1964.

Type locality: Kliphuis, Pakhuis Pass, 11 miles north-east of Clanwilliam, Cape Province, South Africa.

Platymops setiger setiger (Peters)

Mormopterus setiger Peters, 1878.
Mormopterus setiger, Peters, 1881; Allen, G. M., 1939.
Platymops setiger, Harrison and Fleetwood, 1960.
Platymops barbatogularis parkeri Harrison and Fleetwood, 1960.
Type locality: Ndi, Teita, Kenya.

Platymops setiger macmillani Thomas

Platymops macmillani Thomas, 1906.
Platymops macmillani, Allen, G. M., 1939; Harrison, 1956; Harrison and Fleetwood, 1960.
Platymops barbatogularis Harrison, 1956.
Platymops barbatogularis barbatogularis, Harrison and Fleetwood, 1960.
Type locality: between Addis Ababa and Lake Rudolph, Ethiopia.

Neoplatymops mattogrossensis (Vieira)

Molossops mattogrossensis Vieira, 1942.
Molossops temminckii mattogrossensis, Cabrera, 1957.
Cynomops mattogrossensis, Goodwin, 1958.
Type locality: S. Simao, Rio Juruena, north of Mato Grosso, Brazil.

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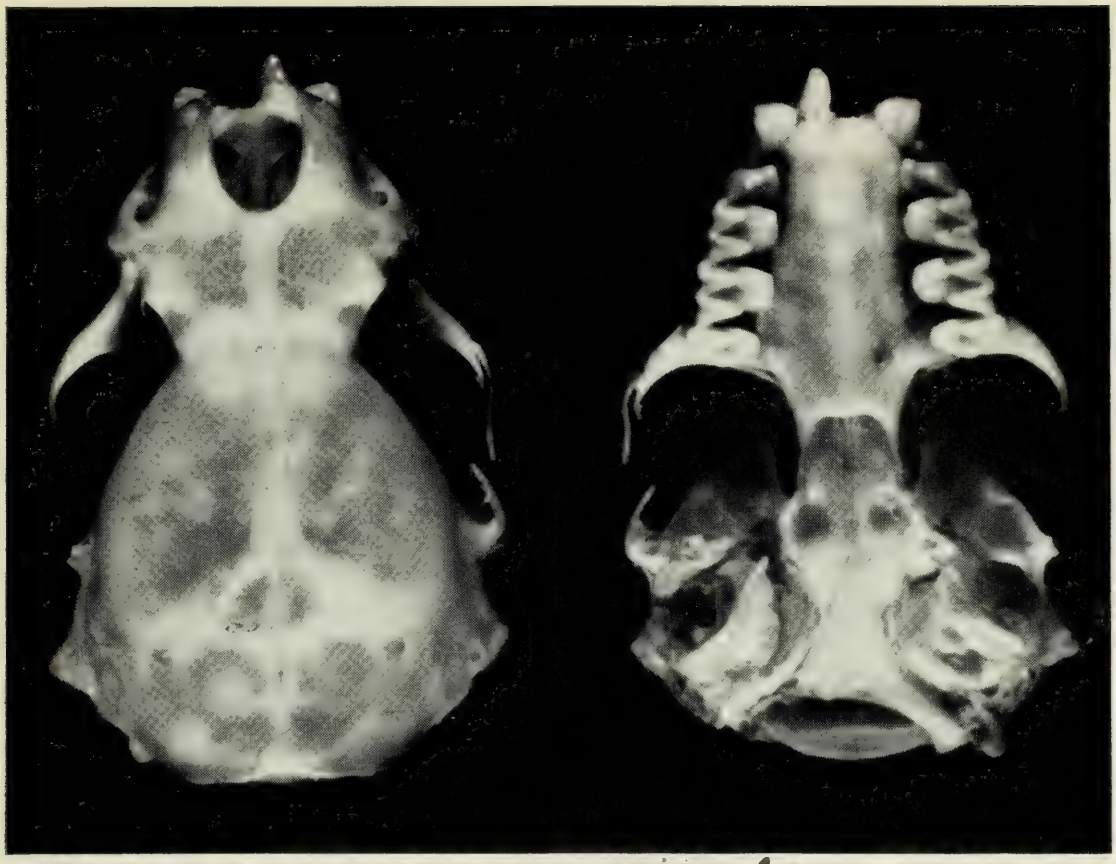

Fig. 1—Paratype of *Molossops mattogrossensis* Vieira, 3596 ♀ Departamento de Zoologia, Sao Paulo. Photographs provided by Señor Cory T. de Corvalho.

Fig. 2—Dorsal and ventral view of *Neoplatymops mattogrossensis* (Vieira), R.O.M. 32263 from 4 mi. E. Dadanawa Ranch Headquarters, Rupununi District, British Guiana, collected by Stanley E. Brock, May 1962.

Fig. 3—Head and forearm sketches of *Neoplatymops mattogrossensis*.

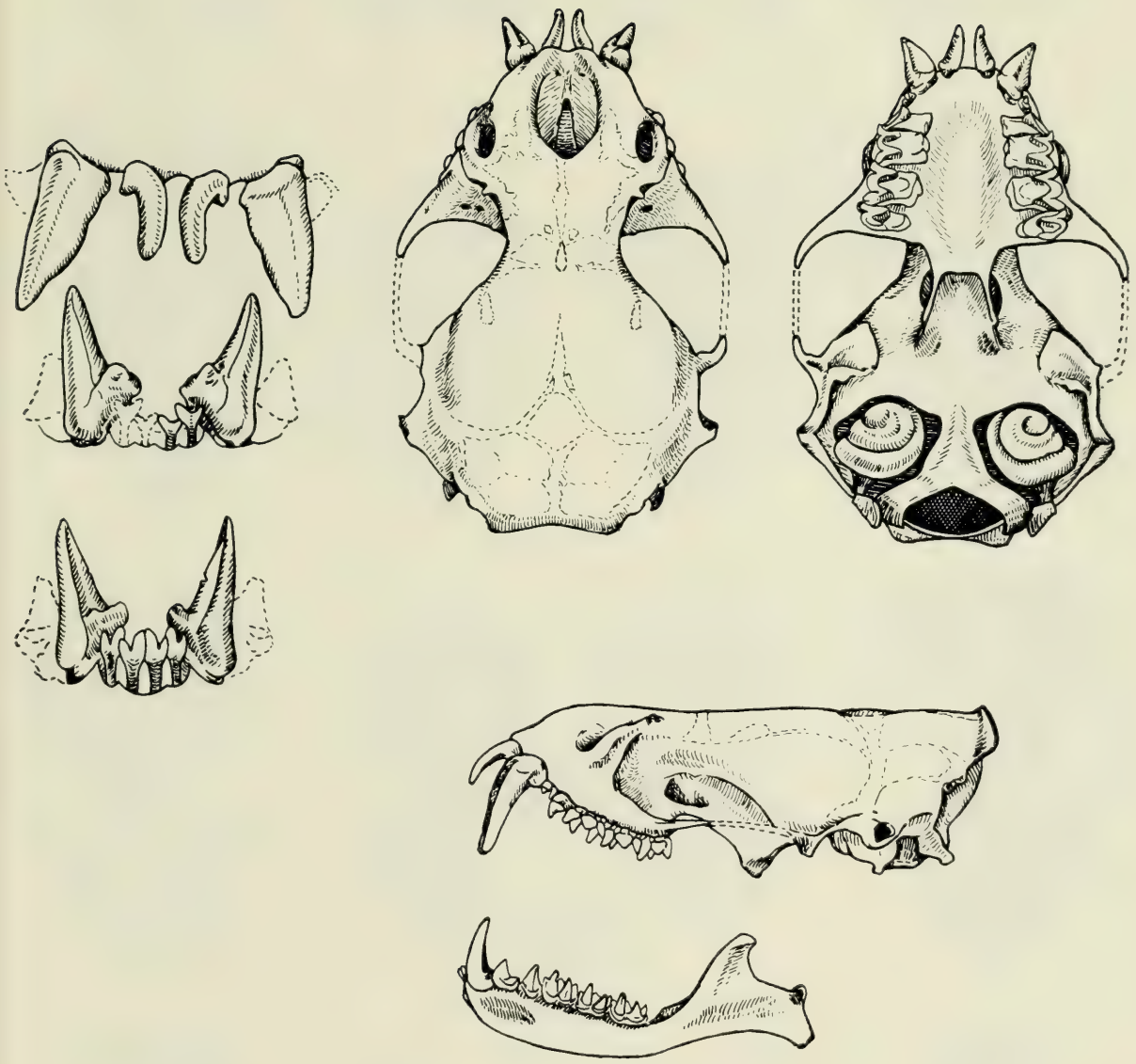

Fig. 4—Skull drawings of *Neoplatymops mattogrossensis* R.O.M. 32263 ♂ with details of the anterior lower jaw of R.O.M. 32292 ♀.

Fig. 5—Cranial comparisons of some molossid genera. Left to right, *Platymops setiger setiger*, *Neoplatymops mattogrossensis*, *Molossops temminckii* (Chicago Nat. Hist. Mus. no. 48773 ♀ from Sapucay, Paraguay), *Cynomops planirostris* (C.N.H.M. no. 22486 ♂ from Hyde Park, Rio Cuyuni, British Guiana).

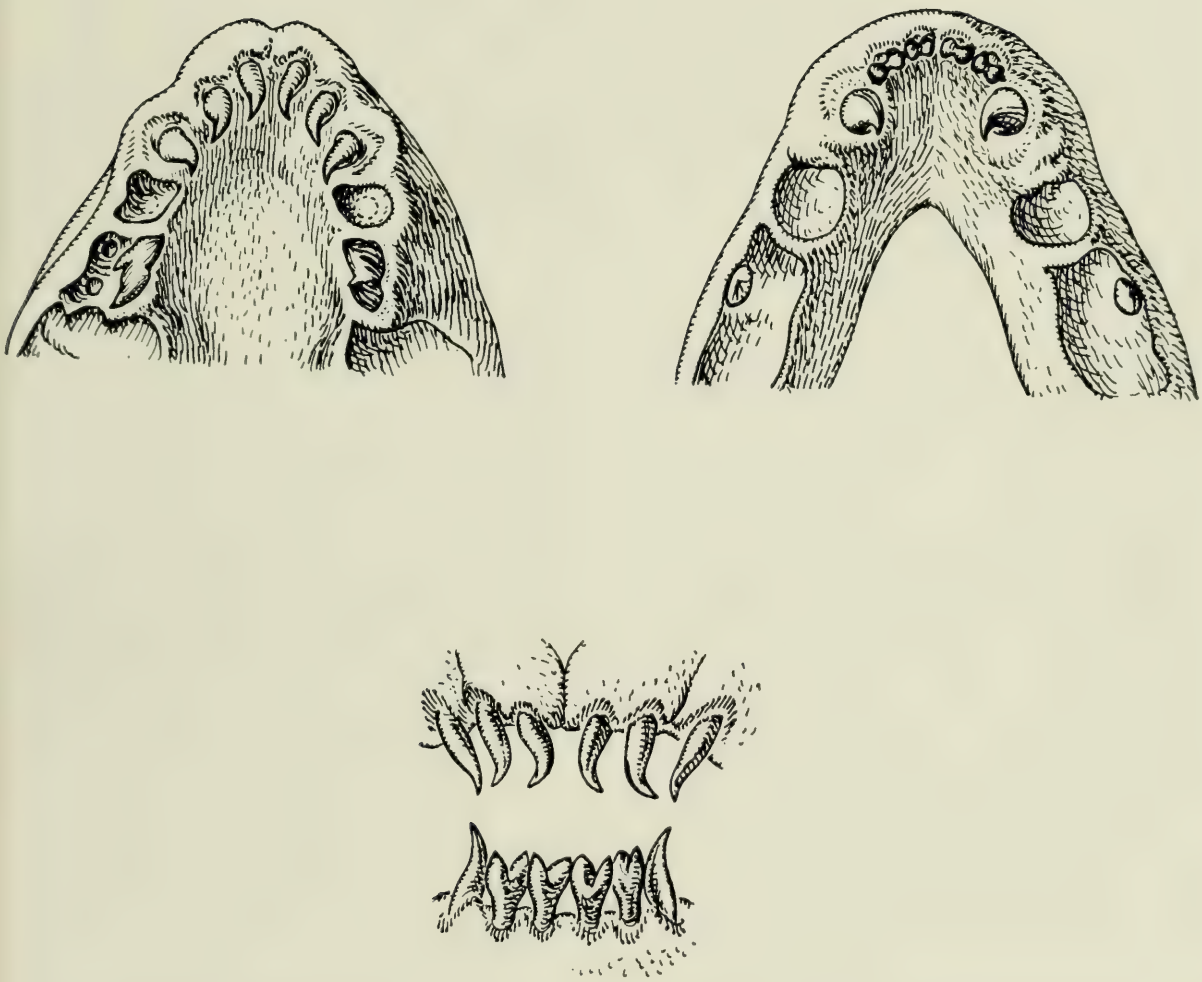

Fig. 6—Milk dentition of *Neoplatymops mattogrossensis*, based on R.O.M. 32993.

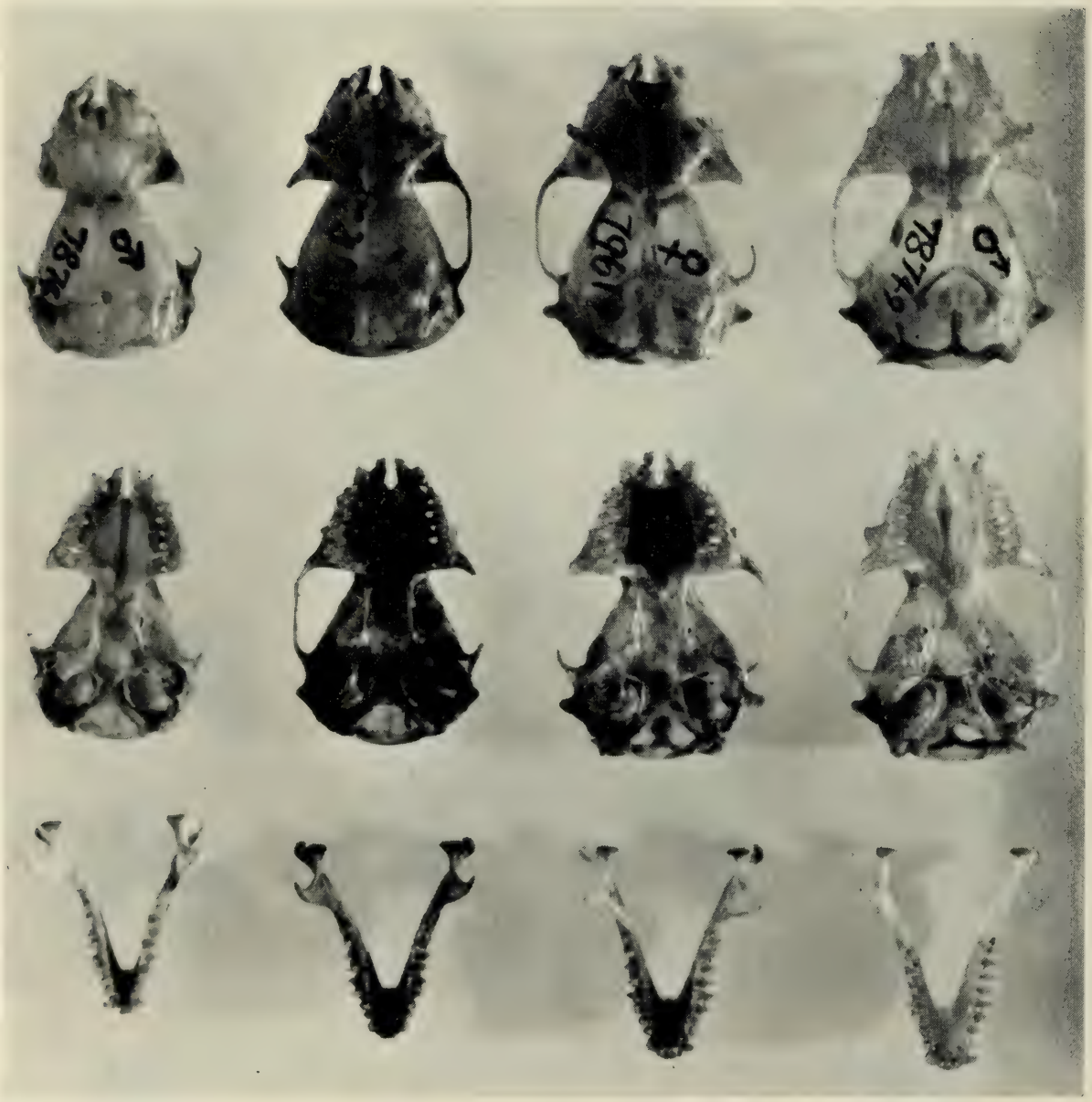

Fig. 7—Cranial comparisons of young and mature adult *Platymops setiger macmillani*. From left to right C.N.H.M. ♂ 78748 from Loelli, Equatoria, Sudan; U.S.N.M. ♀, topotype; C.N.H.M. ♀ 79619 and ♂ 78749 from Lokwi, Equatoria, Sudan.

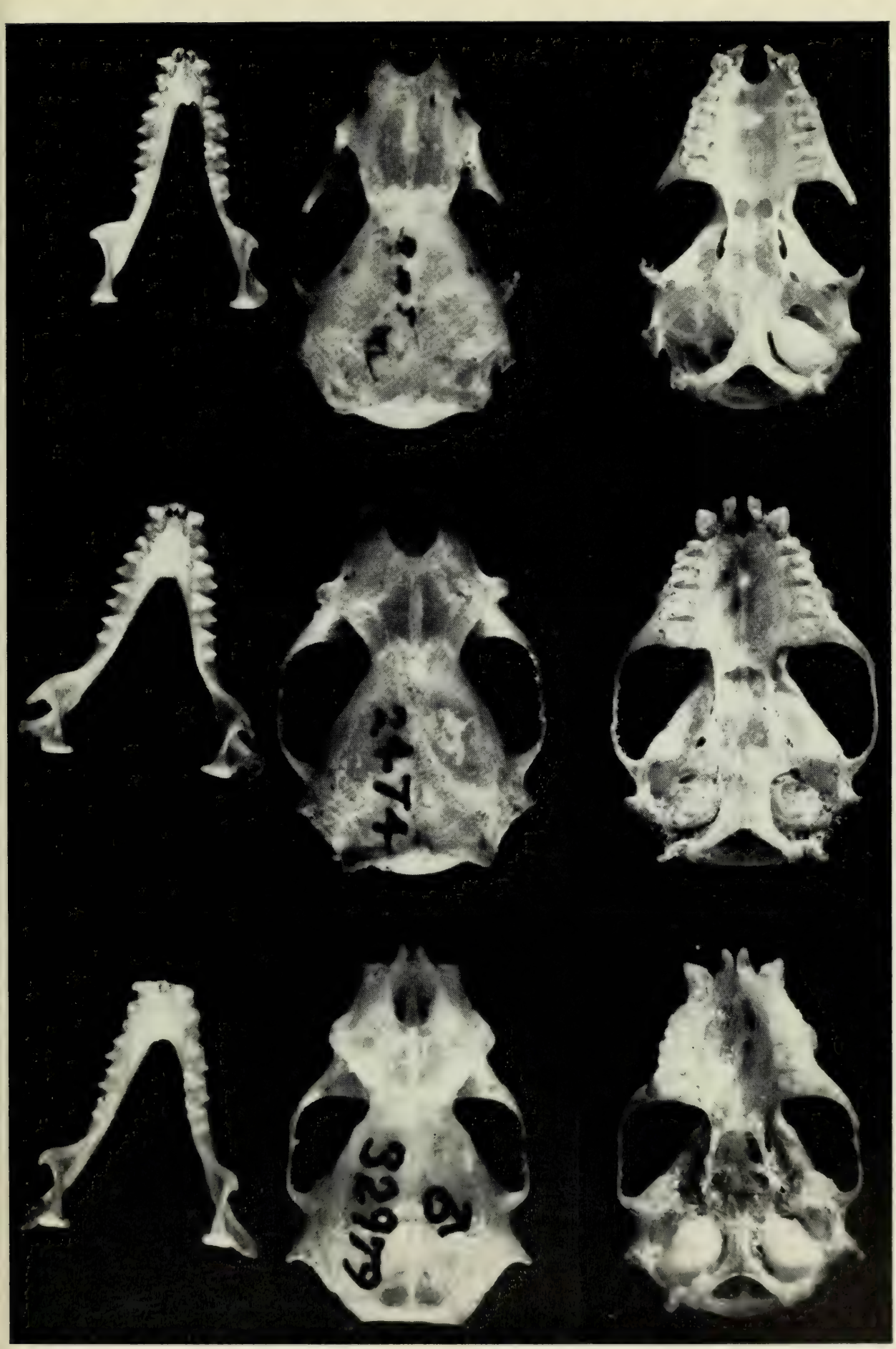

Fig. 8—Cranial comparisons of the flat-headed genera of molossid bats (dorsal and ventral views). Top, *Sauromys petrophilus haagneri*; middle, *Platymops setiger setiger*; bottom, *Neoplatymops mattogrossensis*.

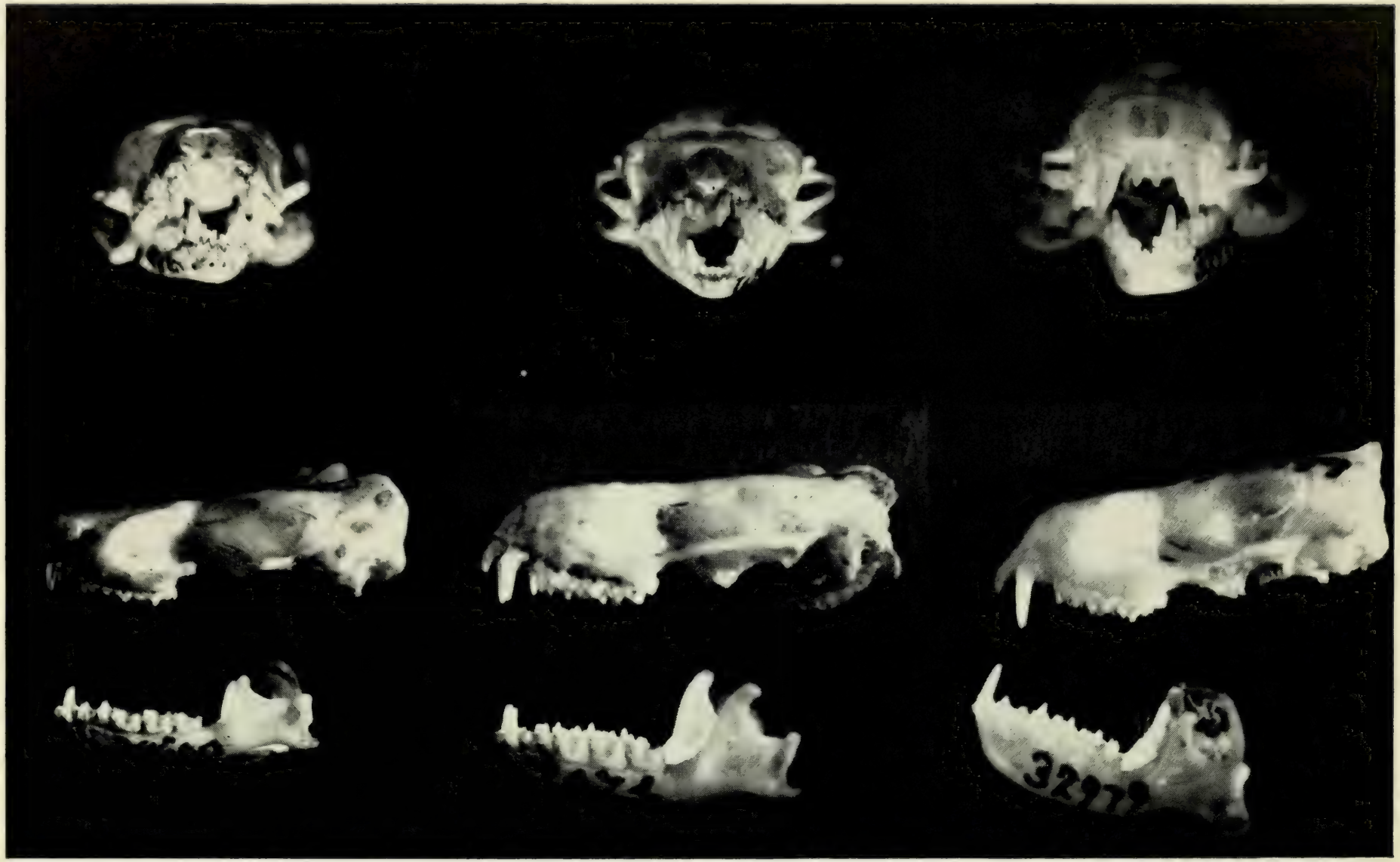

Fig. 9—Cranial comparisons of the flat-headed genera of molossid bats (anterior and lateral views). Left, *Sauromys petrophilus haagneri*; centre, *Platymops setiger setiger*; right, *Neoplatymops mattogrossensis*.